

# Command List

## VISCA<sup>1)</sup> RS-232C Commands

Use of RS-232C control software which has been developed based upon this command list may cause malfunction or damage to hardware and software. Sony Corporation is not liable for any such damage.

### Overview of VISCA

In VISCA, the side outputting commands, for example, a computer, is called the controller, while the side receiving the commands, such as an EVI-HD1, is called the peripheral device. The EVI-HD1 serves as a peripheral device in VISCA. In VISCA, up to seven peripheral devices like the EVI-HD1 can be connected to one controller using communication conforming to the RS-232C standard. The parameters of RS-232C are as follows.

- Communication speed: 9600 bps/38400 bps
- Data bits : 8
- Start bit : 1
- Stop bit : 1
- Non parity

Flow control using XON/XOFF and RTS/CTS, etc., is not supported.

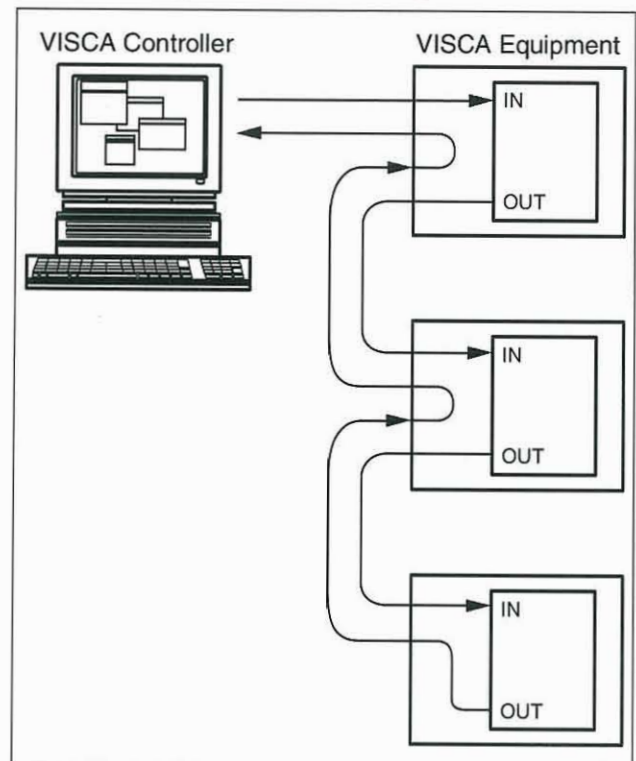
Peripheral devices are connected in a daisy chain. As shown in Fig. 1, the actual internal connection is a one-direction ring, so that messages return to the controller via the peripheral devices. The devices on the network are assigned addresses.

The address of the controller is fixed at 0. The addresses of the peripheral devices are 1, 2, 3 ... in order, starting from the one nearest the controller. The address of the peripheral device is set by sending address commands during the initialization of the network.

The VISCA devices each have a VISCA IN and VISCA OUT connector.

Set the DTR input (the S output of the controller) of VISCA IN to H when controlling VISCA equipment from the controller.

Fig. 1 VISCA network configuration



1) VISCA is a protocol which controls consumer camcorders developed by Sony. "VISCA" is a trademark of Sony Corporation.

# VISCA Communication Specifications

## VISCA packet structure

The basic unit of VISCA communication is called a packet (Fig. 2). The first byte of the packet is called the header and comprises the sender's and receiver's addresses. For example, the header of the packet sent to the EVI-HD1 assigned address 1 from the controller (address 0) is hexadecimal 81H. The packet sent to the

EVI-HD1 assigned address 2 is 82H. In the command list, as the header is 8X, input the address of the EVI-HD1 at X. The header of the reply packet from the EVI-HD1 assigned address 1 is 90H. The packet from the EVI-HD1 assigned address 2 is A0H.

Some of the commands for setting EVI-HD1 units can be sent to all devices at one time (broadcast). In the case of broadcast, the header should be hexadecimal 88H.

When the terminator is FFH, it signifies the end of the packet.

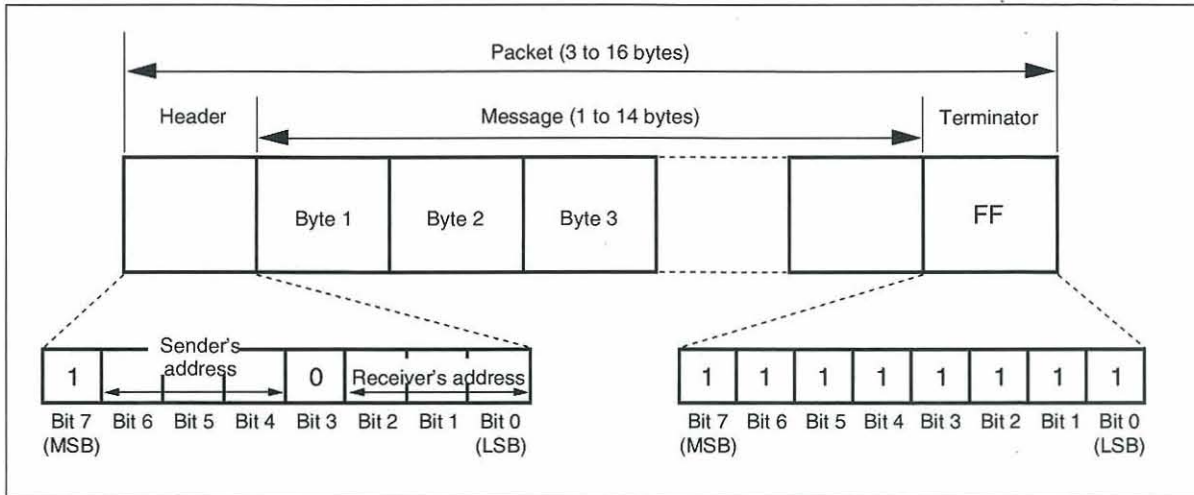


Fig. 2 Packet structure

### Note

Fig. 2 shows the packet structure, while Fig. 3 shows the actual waveform. Data flow will take place with the LSB first.

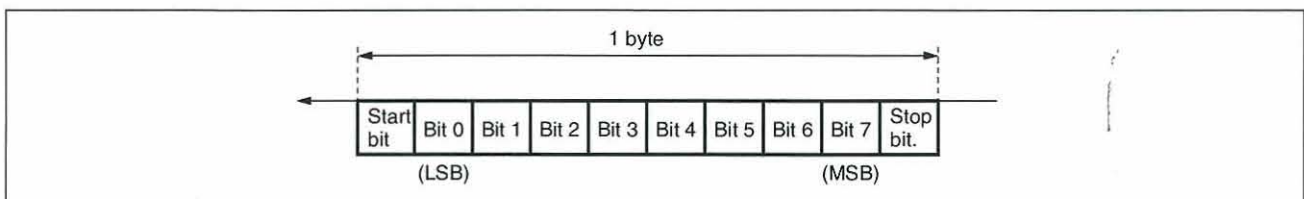


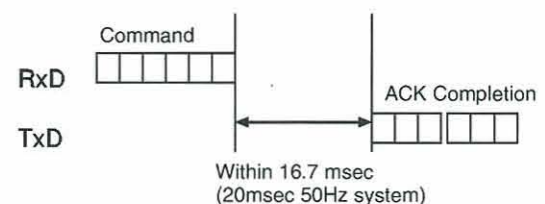
Fig. 3 Actual waveform for 1 byte.

## Timing Chart

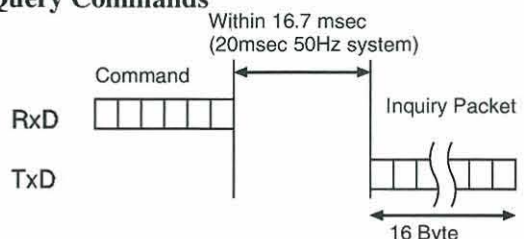
As VISCA Command processing can only be carried out one time in a Vertical cycle, it takes the maximum 1V cycle time for an ACK/Completion to be returned. If the Command ACK/Completion communication time can be cut shorter than the 1V cycle time, then every 1V cycle can receive a Command.

From this point, if 2 or more commands in a row are to be sent, wait for the first command (for normal commands, an ACK or an error message, for query commands, an Inquiry Packet) to be carried out before sending the next one.

### General Commands



### Query Commands





## Command and inquiry

### ● Command

Sends operational commands to the EVI-HD1.

### ● Inquiry

Used for inquiring about the current state of the EVI-HD1.

	Command Packet	Note
Inquiry	8X QQ RR ... FF	QQ <sup>1)</sup> = Command/Inquiry, RR <sup>2)</sup> = category code

<sup>1)</sup> QQ = 01 (Command), 09 (Inquiry)

<sup>2)</sup> RR = 00 (Interface), 04 (camera 1), 06 (Pan/Tilter)

X = 1 to 7: EVI-HD1 address

## Responses for commands and inquiries

### ● ACK message

Returned by the EVI-HD1 when it receives a command. No ACK message is returned for inquiries.

### ● Completion message

Returned by the EVI-HD1 when execution of commands or inquiries is completed. In the case of inquiry commands, it will contain reply data for the inquiry after the 3rd byte of the packet. If the ACK message is omitted, the socket number will contain a 0.

	Reply Packet	Note
Ack	X0 4Y FF	Y = socket number
Completion (commands)	X0 5Y FF	Y = socket number
Completion (Inquiries)	X0 5Y ... FF	Y = socket number

X = 9 to F: EVI-HD1 address + 8

### ● Error message

When a command or inquiry command could not be executed or failed, an error message is returned instead of the completion message.

Error Packet	Description
X0 6Y 02 FF	Syntax Error
X0 6Y 03 FF	Command buffer full
X0 6Y 04 FF	Command cancelled
X0 6Y 05 FF	No socket (to be cancelled)
X0 6Y 41 FF	Command not executable

X = 9 to F: EVI-HD1 address + 8, Y = socket number

## Socket number

When command messages are sent to the EVI-HD1, it is normal to send the next command message after waiting for the completion message or error message to return. However to deal with advanced uses, the EVI-HD1 has two buffers (memories) for commands, so that up to two commands including the commands currently being executed can be received. When the EVI-HD1 receives commands, it notifies the sender which command buffer was used using the socket number of the ACK message.

As the completion message or error message also has a socket number, it indicates which command has ended. Even when two command buffers are being used at any one time, an EVI-HD1 management command and some inquiry messages can be executed.

The ACK message is not returned for these commands and inquiries, and only the completion message of socket number 0 is returned.

## Command execution cancel

To cancel a command which has already been sent, send the Cancel command as the next command. To cancel one of any two commands which have been sent, use the cancel message.

	Cancel Packet	Note
Cancel	8X 2Y FF	Y = socket number

X = 1 to 7: EVI-HD1 address, Y = socket number

The Command canceled error message will be returned for this command, but this is not a fault. It indicates that the command has been canceled.

## VISCA Device Setting Command

Before starting control of the EVI-HD1, be sure to send the Address command and the IF\_Clear command using the broadcast function.

---

### For VISCA network administration

#### ● Address

Sets an address of a peripheral device. Use when initializing the network, and receiving the following network change message.

#### ● Network Change

Sent from the peripheral device to the controller when a device is removed from or added to the network. The address must be re-set when this message is received.

	Packet	Note
Address	88 30 01 FF	Always broadcasted.
Network Change	X0 38 FF	
X = 9 to F: EVI-HD1 address + 8		

---

### VISCA interface command

#### ● IF\_Clear

Clears the command buffers in the EVI-HD1 and cancels the command currently being executed.

	Command Packet	Reply Packet	Note
IF_Clear	8X 01 00 01 FF	X0 50 FF	
IF_Clear (broadcast)	88 01 00 01 FF	88 01 00 01 FF	
X = 1 to 7: EVI-HD1 address (For inquiry packet)			
X = 9 to F: EVI-HD1 address +8 (For reply packet)			

---

### VISCA interface and inquiry

#### ● CAM\_VersionInq

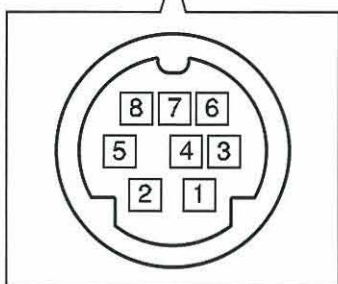
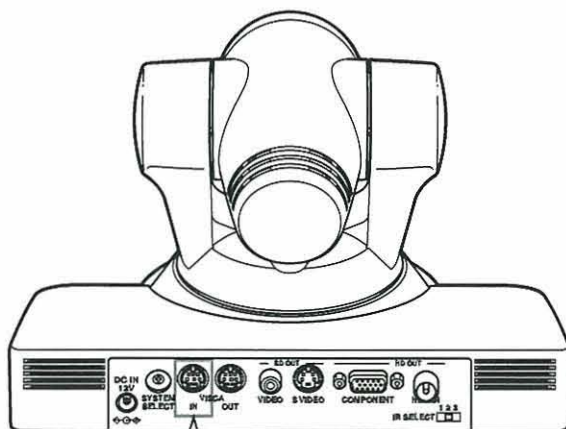
Returns information on the VISCA interface.

Inquiry	Inquiry Packet	Reply Packet	Description
CAM_VersionInq	8X 09 00 02 FF	Y0 50 GG GG HH HH JJ JJ KK FF	GGGG = Vender ID (0020: Sony) HHHH = Model ID 0504: EVI-HD1 JJJJ = ROM revision KK = Maximum socket # (02)

X = 1 to 7: EVI-HD1 address (For inquiry packet)

X = 9 to F: EVI-HD1 address +8 (For reply packet)

## Pin assignment

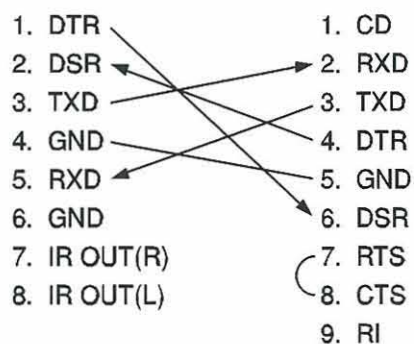


VISCA IN

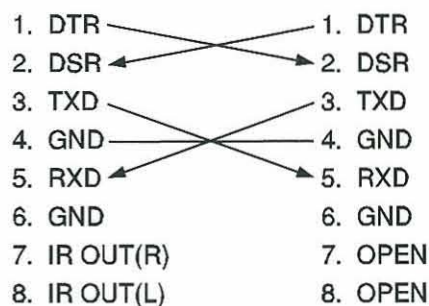
No	Pins
1	DTR IN
2	DSR IN
3	TXD IN
4	GND
5	RXD IN
6	GND
7	IR OUT (R)*
8	IR OUT (L)*

\* You can change ON/OFF of IR OUT of pins 7 and 8 using the BOTTOM switch (see page 6).

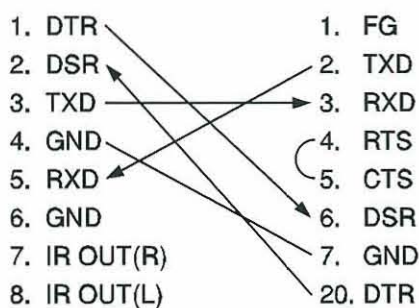
### • EVI-HD1 Windows D-sub 9 pin



### • EVI-HD1 EVI Camera or Mini DIN 8 pin serial



### • EVI-HD1 Windows D-sub 25 pin



## VISCA Command/ACK Protocol

Command	Command Message	Reply Message	Comments
General Command	81 01 04 38 02 FF (Example)	90 41 FF (ACK)+90 51 FF (Completion) 90 42 FF 90 52 FF	Returns ACK when a command has been accepted, and Completion when a command has been executed.
	81 01 04 38 FF (Example)	90 60 02 FF (Syntax Error)	Accepted a command which is not supported or a command lacking parameters.
	81 01 04 38 02 FF (Example)	90 60 03 FF (Command Buffer Full)	There are two commands currently being executed, and the command could not be accepted.
	81 01 04 08 02 FF (Example)	90 61 41 FF (Command Not Executable) 90 62 41 FF	Could not execute the command in the current mode.
Inquiry Command	81 09 04 38 FF (Example)	90 50 02 FF (Completion)	ACK is not returned for the inquiry command.
	81 09 05 38 FF (Example)	90 60 02 FF (Syntax Error)	Accepted an incompatible command.
Address Set	88 30 01 FF	88 30 02 FF	Returned the device address to +1.
IF_Clear(Broadcast)	88 01 00 01 FF	88 01 00 01 FF	Returned the same command.
IF_Clear (For x)	8x 01 00 01 FF	z0 50 FF (Completion)	ACK is not returned for this command.
Command Cancel	8x 2y FF	z0 6y 04 FF (Command Canceled)	Returned when the command of the socket specified is canceled. Completion for the command canceled is not returned.
		z0 6y 05 FF (No Socket)	Returned when the command of the specified socket has already been completed or when the socket number specified is wrong.



## VISCA Camera-Issued Messages

### ACK/Completion Messages

	Command Messages	Comments
ACK	z0 4y FF (y:Socket No.)	Returned when the command is accepted.
Completion	z0 5y FF (y:Socket No.)	Returned when the command has been executed.

z = Device address + 8

### Error Messages

	Command Messages	Comments
Syntax Error	z0 60 02 FF	Returned when the command format is different or when a command with illegal command parameters is accepted.
Command Buffer Full	z0 60 03 FF	Indicates that two sockets are already being used (executing two commands) and the command could not be accepted when received.
Command Canceled	z0 6y 04 FF (y:Socket No.)	Returned when a command which is being executed in a socket specified by the cancel command is canceled. The completion message for the command is not returned.
No Socket	z0 6y 05 FF (y:Socket No.)	Returned when no command is executed in a socket specified by the cancel command, or when an invalid socket number is specified.
Command Not Executable	z0 6y 41 FF (y:Execution command Socket No. Inquiry command:0)	Returned when a command cannot be executed due to current conditions. For example, when commands controlling the focus manually are received during auto focus.

### Network Change Message

	Command Message	Comments
Network Change	z0 38 FF	Issued when power is being routed to the camera, or when the VISCA device is connected to or disconnected from the VISCA RS-232C OUT connector used for communication.

# EVI-HD1 Commands

## EVI-HD1 Command List (1/3)

Command Set	Command	Command Packet	Comments
AddressSet	Broadcast	88 30 01 FF	Address setting
IF_Clear	Broadcast	88 01 00 01 FF	I/F Clear
CommandCancel		8x 2p FF	p: Socket No.(=1or2)
CAM_Power	On	8x 01 04 00 02 FF	Power ON/OFF
	Off	8x 01 04 00 03 FF	
CAM_Zoom	Stop	8x 01 04 07 00 FF	
	Tele(Standard)	8x 01 04 07 02 FF	
	Wide(Standard)	8x 01 04 07 03 FF	
	Tele(Variable)	8x 01 04 07 2p FF	p=0 (Low) to 7 (High)
	Wide(Variable)	8x 01 04 07 3p FF	
	Direct	8x 01 04 47 0p 0q 0r 0s FF	pqrs: Zoom Position
CAM_DZoom	D-Zoom Limit	8x 01 04 26 0p FF	p=0 (x1), 1 (x1.5), 2 (x2), 3 (x4)
CAM_Focus	Stop	8x 01 04 08 00 FF	
	Far(Standard)	8x 01 04 08 02 FF	
	Near(Standard)	8x 01 04 08 03 FF	
	Far(Variable)	8x 01 04 08 2p FF	p=0 (Low) to 7 (High)
	Near(Variable)	8x 01 04 08 3p FF	
	Direct	8x 01 04 48 0p 0q 0r 0s FF	pqrs: Focus Position
	Auto Focus	8x 01 04 38 02 FF	AF ON/OFF
	Manual Focus	8x 01 04 38 03 FF	
	Auto/Manual	8x 01 04 38 10 FF	
	One Push Trigger	8x 01 04 18 01 FF	One Push AF Trigger
	Infinity	8x 01 04 18 02 FF	Forced infinity
	Near Limit	8x 01 04 28 0p 0q 0r 0s FF	pqrs: Focus Near Limit Position
CAM_ZoomFocus	Direct	8x 01 04 47 0p 0q 0r 0s	pqrs: Zoom Position
		0t 0u 0v 0w FF	tuvw: Focus Position
CAM_WB	Auto	8x 01 04 35 00 FF	Normal Auto
	Indoor	8x 01 04 35 01 FF	Indoor mode
	Outdoor	8x 01 04 35 02 FF	Outdoor mode
	One Push WB	8x 01 04 35 03 FF	One Push WB mode
	Manual	8x 01 04 35 05 FF	Manual Control mode
	One Push Trigger	8x 01 04 10 05 FF	One Push WB Trigger
CAM_RGain	Reset	8x 01 04 03 00 FF	Manual Control of R Gain
	Up	8x 01 04 03 02 FF	
	Down	8x 01 04 03 03 FF	
	Direct	8x 01 04 43 00 00 0p 0q FF	pq: R Gain
CAM_BGain	Reset	8x 01 04 04 00 FF	Manual Control of B Gain
	Up	8x 01 04 04 02 FF	
	Down	8x 01 04 04 03 FF	
	Direct	8x 01 04 44 00 00 0p 0q FF	pq: B Gain



## EVI-HD1 Command List (2/3)

Command Set	Command	Command Packet	Comments
CAM_AE	Full Auto	8x 01 04 39 00 FF	Automatic Exposure mode
	Manual	8x 01 04 39 03 FF	Manual Control mode
	Shutter Priority	8x 01 04 39 0A FF	Shutter Priority Automatic Exposure mode
	Iris Priority	8x 01 04 39 0B FF	Iris Priority Automatic Exposure mode
	Bright	8x 01 04 39 0D FF	Bright Mode (Manual control)
	CAM SpotLight	8x 01 04 39 10 FF	Spot light mode
CAM_SlowShutter	AutoSlowShutterLimit	8x 01 04 2A 0p 00 FF	p= 0 (1/60), 1 (1/30), 2 (1/15)
CAM_Shutter	Reset	8x 01 04 0A 00 FF	Shutter Setting
	Up	8x 01 04 0A 02 FF	
	Down	8x 01 04 0A 03 FF	
	Direct	8x 01 04 4A 00 00 0p 0q FF	pq: Shutter Position
CAM_Iris	Reset	8x 01 04 0B 00 FF	Iris Setting
	Up	8x 01 04 0B 02 FF	
	Down	8x 01 04 0B 03 FF	
	Direct	8x 01 04 4B 00 00 0p 0q FF	pq: Iris Position
CAM_Gain	Reset	8x 01 04 0C 00 FF	Gain Setting
	Up	8x 01 04 0C 02 FF	
	Down	8x 01 04 0C 03 FF	
	Direct	8x 01 04 4C 00 00 0p 0q FF	pq: Gain Position
CAM_Bright	Reset	8x 01 04 0D 00 FF	Bright Setting
	Up	8x 01 04 0D 02 FF	
	Down	8x 01 04 0D 03 FF	
	Direct	8x 01 04 4D 00 00 0p 0q FF	pq: Bright Position
CAM_ExpComp	On	8x 01 04 3E 02 FF	Exposure Compensation ON/OFF
	Off	8x 01 04 3E 03 FF	
	Reset	8x 01 04 0E 00 FF	Exposure Compensation Amount Setting
	Up	8x 01 04 0E 02 FF	
	Down	8x 01 04 0E 03 FF	
	Direct	8x 01 04 4E 00 00 0p 0q FF	pq: ExpComp Position
CAM_Backlight	On	8x 01 04 33 02 FF	Back Light Compensation ON/OFF
	Off	8x 01 04 33 03 FF	
CAM_Aperture	Reset	8x 01 04 02 00 FF	Aperture Control
	Up	8x 01 04 02 02 FF	
	Down	8x 01 04 02 03 FF	
	Direct	8x 01 04 42 00 00 0p 0q FF	pq: Aperture Gain
CAM_PictureEffect	Off	8x 01 04 63 00 FF	Picture Effect Setting
	Neg.Art	8x 01 04 63 02 FF	
	B&W	8x 01 04 63 04 FF	
CAM_Memory	Reset <sup>1)</sup>	8x 01 04 3F 00 0p FF	p: Memory Number (=0 to 5) Corresponds to 1 to 6 on the Remote Commander.
	Set <sup>1)</sup>	8x 01 04 3F 01 0p FF	
	Recall <sup>1) 2)</sup>	8x 01 04 3F 02 0p FF	
SYS_Menu	Off	8x 01 06 06 03 FF	Not to display the menu

## EVI-HD1 Command List (3/3)

Command Set	Command	Command Packet	Comments
CAM_IDWrite		8x 01 04 22 0p 0q 0r 0s FF	pqrs: Camera ID (=0000 to FFFF)
IR_Receive	On	8x 01 06 08 02 FF	IR(remote commander) receive ON/OFF
	Off	8x 01 06 08 03 FF	
	On/Off	8x 01 06 08 10 FF	
IR_ReceiveReturn	On	8x 01 7D 01 03 00 00 FF	IR(remote commander) receive message via the VISCA communication ON/OFF
	Off	8x 01 7D 01 13 00 00 FF	
D-SUB 15Pin SYNC	3-STATE	8x 01 7E 01 1A 00 00 FF	Setting the sync of the HD analog component output
	VD	8x 01 7E 01 1A 00 01 FF	
Information Display	On	8x 01 7E 01 18 02 FF	ON/OFF of the Operation status display of One Push
	Off	8x 01 7E 01 18 03 FF	Trigger of CAM_Memory and CAM_WB
Pan-tiltDrive	Up <sup>1)</sup>	8x 01 06 01 VV WW 03 01 FF	VV: Pan speed 0 x01 (low speed) to 0 x18 (high speed)
	Down <sup>1)</sup>	8x 01 06 01 VV WW 03 02 FF	WW: Tilt Speed 0 x 01 (low speed) to 0 x14 (high speed)
	Left <sup>1)</sup>	8x 01 06 01 VV WW 01 03 FF	YYYY: Pan Position FA60 to 05A0 (center 0000)
	Right <sup>1)</sup>	8x 01 06 01 VV WW 02 03 FF	ZZZZ: Tilt Position FE98 to 0168 (center 0000)
	UpLeft <sup>1)</sup>	8x 01 06 01 VV WW 01 01 FF	See page 37.
	UpRight <sup>1)</sup>	8x 01 06 01 VV WW 02 01 FF	
	DownLeft <sup>1)</sup>	8x 01 06 01 VV WW 01 02 FF	
	DownRight <sup>1)</sup>	8x 01 06 01 VV WW 02 02 FF	
	Stop <sup>1)</sup>	8x 01 06 01 VV WW 03 03 FF	
	AbsolutePosition	8x 01 06 02 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	
	RelativePosition	8x 01 06 03 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	
	Home	8x 01 06 04 FF	
	Reset	8x 01 06 05 FF	
Pan-tiltLimitSet	LimitSet	8x 01 06 07 00 0W 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	W: 1 UpRight 0: DownLeft YYYY: Pan Limit Position FA60 to 05A0 (center 0000)
	LimitClear	8x 01 06 07 01 0W 07 0F 0F 0F 07 0F 0F 0F FF	ZZZZ: Tilt Position FE98~0168 (center 0000)

1) When the menu is displayed, this operation is ignored.

2) The completion command may not be received for maximum 240 msec (Typ. 80 msec) due to the internal processing status of the camera after the completion command is sent.

## EVI-HD1 Inquiry Command List (1/2)

Inquiry Command	Command Packet	Inquiry Packet	Comments
CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF	On
		y0 50 03 FF	Off (Standby)
		y0 50 04 FF	Internal power circuit error
CAM_ZoomPosInq	8x 09 04 47 FF	y0 50 0p 0q 0r 0s FF	pqrs: Zoom Position
CAM_DZoomLimitInq	8x 09 04 26 FF	y0 50 0p FF	p= 2 (x1), 1 (x1/5), 2 (x2), 3 (x4)
CAM_FocusModeInq	8x 09 04 38 FF	y0 50 02 FF	Auto Focus
		y0 50 03 FF	Manual Focus
CAM_FocusPosInq	8x 09 04 48 FF	y0 50 0p 0q 0r 0s FF	pqrs: Focus Position
CAM_FocusNearLimitInq	8x 09 04 28 FF	y0 50 0p 0q 0r 0s FF	pqrs: Focus Near Limit Position
CAM_WBModeInq	8x 09 04 35 FF	y0 50 00 FF	Auto
		y0 50 01 FF	In Door
		y0 50 02 FF	Out Door
		y0 50 03 FF	One Push WB
		y0 50 04 FF	ATW
		y0 50 05 FF	Manual
CAM_RGainInq	8x 09 04 43 FF	y0 50 00 00 0p 0q FF	pq: R Gain
CAM_BGainInq	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	pq: B Gain
CAM_AEModeInq	8x 09 04 39 FF	y0 50 00 FF	Full Auto
		y0 50 03 FF	Manual
		y0 50 0A FF	Shutter Priority
		y0 50 0B FF	Iris Priority
		y0 50 0D FF	Bright
		y0 50 10 FF	Spot Light
CAM_AutoSlowShutterLimitInq	8x 09 04 2A FF	y0 50 0p 00 FF	p=0 (1/60), 1 (1/30), 2 (1/15)
CAM_ShutterPosInq	8x 09 04 4A FF	y0 50 00 00 0p 0q FF	pq: Shutter Position
CAM_IrisPosInq	8x 09 04 4B FF	y0 50 00 00 0p 0q FF	pq: Iris Position
CAM_GainPosInq	8x 09 04 4C FF	y0 50 00 00 0p 0q FF	pq: Gain Position
CAM_BrightPosInq	8x 09 04 4D FF	y0 50 00 00 0p 0q FF	pq: Bright Position
CAM_ExpCompModeInq	8x 09 04 3E FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_ExpCompPosInq	8x 09 04 4E FF	y0 50 00 00 0p 0q FF	pq: ExpComp Position
CAM_BacklightModeInq	8x 09 04 33 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_ApertureInq	8x 09 04 42 FF	y0 50 00 00 0p 0q FF	pq: Aperture Gain
CAM_PictureEffectModeInq	8x 09 04 63 FF	y0 50 00 FF	Off
		y0 50 02 FF	Neg.Art
		y0 50 04 FF	B&W
CAM_MemoryInq	8x 09 04 3F FF	y0 50 0p FF	p: Memory number last operated.
SYS_MenuModeInq	8x 09 06 06 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_IDInq	8x 09 04 22 FF	y0 50 0p 0q 0r 0s FF	pqrs: Camera ID



## EVI-HD1 Inquiry Command List (2/2)

Inquiry Command	Command Packet	Inquiry Packet	Comments			
CAM_VersionInq	8x 09 00 02 FF	y0 50 00 01 mn pq rs tu vw FF	mnpq: Model Code (0504) rstu: ROM version vw: Socket Number (=02) See page 21.			
D-SUB 15Pin SYNC	8x 09 7E 01 1A FF	y0 50 00 FF	3-STATE			
		y0 50 01 FF	VD			
Information Display	8x 09 7E 01 18 FF	y0 50 02 FF	On			
		y0 50 03 FF	Off			
VideoSystemInq	8x 09 06 23 FF		Video format			Output connector
		y0 50 00 FF	1920 x1080i/59.94	59.94 Hz system	15P Dsub, HD-SD	
		y0 50 01 FF	1920 x1080p/29.97			
		y0 50 02 FF	1280 x720p/59.94			
		y0 50 03 FF	1280 x720p/29.97			
		y0 50 04 FF	NTSC	Letter Box	RCA phono Mini DIN 4-pin	
		y0 50 05 FF		Crop		
		y0 50 06 FF		Squeeze		
		y0 50 08 FF	1920 x1080i/50	50 Hz system	15P Dsub, HD-SDI	
		y0 50 09 FF	1920 x1080p/25			
		y0 50 0A FF	1280 x720p/50			
		y0 50 0B FF	1280 x 720p/25			
		y0 50 0C FF	PAL	Letter Box	RCA phono Mini DIN 4-pin	
		y0 50 0D FF		Crop		
		y0 50 0E FF		Squeeze		
IR_Receove	8x 09 06 08 FF	y0 50 02 FF	On			
		y0 50 03 FF	Off			
IR_ReceiveReturn		y0 07 7D 01 04 00 FF	Power ON/OFF			
		y0 07 7D 01 04 07 FF	Zoom tele/wide			
		y0 07 7D 01 04 38 FF	AF On/Off			
		y0 07 7D 01 04 33 FF	CAM_Backlight			
		y0 07 7D 01 04 3F FF	CAM_Memory			
		y0 07 7D 01 06 01 FF	Pan_tiltDrive			
IR_ConditionInq	8x 09 06 34 FF	y0 50 00 FF	Stable reception from the IR Remote Commander			
		y0 50 01 FF	Unstable reception from the IR Remote Commander			
		y0 50 02 FF	Impossible to detect the infrared signals from the Remote Commander because the camera is turned on by the Remote Commander.			
Pan-tiltMaxSpeedInq	8x 09 06 11 FF	y0 50 ww zz FF	ww = Pan Max Speed zz = Tilt Max Speed			
Pan-tiltPosInq	8x 09 06 12 FF	y0 50 0w 0w 0w 0w 0z 0z 0z 0z FF	www = Pan Position zzzz = Tilt Position See page 37.			
Pan-tiltModeInq	8x 09 06 10 FF	y0 50 pq rs FF	pqrs: Pan/Tilt Status See page 37.			

## EVI-HD1 Block Inquiry Command List

## Lens control system inquiry commands ..... Command Packet 8x 09 7E 7E 00 FF

Byte	Bit	Comments
0	7	Destination Address
	6	
	5	
	4	
	3	Source Address
	2	
	1	
	0	
1	7	0 Completion Message (50h)
	6	1
	5	0
	4	1
	3	0
	2	0
	1	0
	0	0
2	7	0
	6	0
	5	0
	4	0
	3	Zoom Position (HH)
	2	
	1	
	0	
3	7	0
	6	0
	5	0
	4	0
	3	Zoom Position (HL)
	2	
	1	
	0	
4	7	0
	6	0
	5	0
	4	0
	3	Zoom Position (LH)
	2	
	1	
	0	
5	7	0
	6	0
	5	0
	4	0
	3	Zoom Position (LL)
	2	
	1	
	0	

Byte	Bit	Comments
6	7	0
	6	0
	5	0
	4	0
	3	Focus Near Limit (H)
	2	
	1	
	0	
7	7	0
	6	0
	5	0
	4	0
	3	Focus Near Limit (L)
	2	
	1	
	0	
8	7	0
	6	0
	5	0
	4	0
	3	Focus Position (HH)
	2	
	1	
	0	
9	7	0
	6	0
	5	0
	4	0
	3	Focus Position (HL)
	2	
	1	
	0	
10	7	0
	6	0
	5	0
	4	0
	3	Focus Position (LH)
	2	
	1	
	0	
11	7	0
	6	0
	5	0
	4	0
	3	Focus Position (LL)
	2	
	1	
	0	

Byte	Bit	Comments
12	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
13	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	1
	0	Focus Mode 1: Auto 0: Manual
14	7	0
	6	0
	5	0
	4	0
	3	0
	2	0/1 (Optional)
	1	0/1 (Optional)
	0	0/1 (Optional)
15	7	1 Terminator (FFh)
	6	1
	5	1
	4	1
	3	1
	2	1
	1	1
	0	1

**Camera control system inquiry commands .. Command Packet 8x 09 7E 7E 01 FF**

Byte	Bit	Comments
0	7	Destination Address
	6	
	5	
	4	
	3	Source Address
	2	
	1	
	0	
1	7	0 Completion Message (50h)
	6	1
	5	0
	4	1
	3	0
	2	0
	1	0
	0	0
2	7	0
	6	0
	5	0
	4	0
	3	WB R_Gain (H)
	2	
	1	
	0	
3	7	0
	6	0
	5	0
	4	0
	3	WB R_Gain (L)
	2	
	1	
	0	
4	7	0
	6	0
	5	0
	4	0
	3	WB B_Gain (H)
	2	
	1	
	0	
5	7	0
	6	0
	5	0
	4	0
	3	WB B_Gain (L)
	2	
	1	
	0	

Byte	Bit	Comments
6	7	0
	6	0
	5	0
	4	OnePush RES
	3	0: Inquiring 1: OK 2: NG
	2	WB Mode
	1	0: Auto 1: Indoor 2: Outdoor
	0	3: OnePush 5: Manual
7	7	0
	6	0
	5	0
	4	0
	3	Aperture Gain
	2	
	1	
	0	
8	7	0
	6	0
	5	0
	4	Exposure Mode
	3	0x0: Auto 0x3: Manual
	2	0xA: Shutter Pri
	1	0xB: Iris Pri 0xD: Bright
	0	0x10: SpotLight
9	7	0
	6	0
	5	0
	4	0
	3	0
	2	Back Light 1:On 0:Off
	1	Exposure Comp. 1:On 0:Off
	0	1
10	7	0
	6	0
	5	0
	4	Shutter Position
	3	
	2	
	1	
	0	
11	7	0
	6	0
	5	0
	4	Manual Iris Position
	3	
	2	
	1	
	0	

Byte	Bit	Comments
12	7	0
	6	0
	5	0
	4	0
	3	Manual Gain Position
	2	
	1	
	0	
13	7	0
	6	0
	5	0
	4	Bright Position
	3	
	2	
	1	
	0	
14	7	0
	6	0
	5	0
	4	0
	3	Exposure Comp. Position
	2	
	1	
	0	
15	7	1 Terminator (FFh)
	6	1
	5	1
	4	1
	3	1
	2	1
	1	1
	0	1



**Other inquiry commands..... Command Packet 8x 09 7E 7E 02 FF**

Byte	Bit	Comments
0	7	Destination Address
	6	
	5	
	4	
	3	Source Address
	2	
	1	
	0	
1	7	0 Completion Message (50h)
	6	1
	5	0
	4	1
	3	0
	2	0
	1	0
	0	0
2	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	Power 1: On 0: Off
3	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
4	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
5	7	0
	6	0
	5	0
	4	0
	3	Picture Effect Mode
	2	
	1	
	0	

Byte	Bit	Comments
6	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
7	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
8	7	0
	6	0
	5	0
	4	0
	3	Camera ID (HH)
	2	
	1	
	0	
9	7	0
	6	0
	5	0
	4	0
	3	Camera ID (HL)
	2	
	1	
	0	
10	7	0
	6	0
	5	0
	4	0
	3	Camera ID (LH)
	2	
	1	
	0	
11	7	0
	6	0
	5	0
	4	0
	3	Camera ID (LL)
	2	
	1	
	0	

Byte	Bit	Comments
12	7	0
	6	0
	5	0
	4	1
	3	0
	2	0
	1	0
	0	System 1:50/25/PAL 0:59.94/29.97/NTSC
13	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
14	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
15	7	1 Terminator (FFh)
	6	1
	5	1
	4	1
	3	1
	2	1
	1	1
	0	1

**Enlargement Function Query Command ..... Command Packet 8x 09 7E 7E 03 FF**

Byte	Bit	Comments
0	7	Destination Address
	6	
	5	
	4	
	3	Source Address
	2	
	1	
	0	
1	7	0 Completion Message (50h)
	6	1
	5	0
	4	1
	3	0
	2	0
	1	0
	0	0
2	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
3	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
4	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
	7	0
	6	0
	5	0
	4	0
	3	0
	2	1
	1	0
	0	1

Byte	Bit	Comments
6	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
7	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
8	7	0
	6	0
	5	0
	4	0
	3	1
	2	0
	1	0
	0	0
9	7	0
	6	0
	5	0
	4	0
	3	1
	2	0
	1	0
	0	0
10	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
11	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0

Byte	Bit	Comments
12	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
13	7	0
	6	0
	5	0
	4	0
	3	Auto Slow Shutter Limit
	2	
	1	
	0	
14	7	0
	6	0
	5	0
	4	0
	3	D-Zoom Limit
	2	
	1	
	0	
15	7	1 Terminator (FFh)
	6	1
	5	1
	4	1
	3	1
	2	1
	1	1
	0	1

# VISCA Command Setting Values

## Exposure Control (1/2)

59.94/29.97/NTSC 50/25/PAL			
Shutter Speed	15	10000	10000
	14	6000	6000
	13	4000	3500
	12	3000	2500
	11	2000	1750
	10	1500	1250
	0F	1000	1000
	0E	725	600
	0D	500	425
	0C	350	300
	0B	250	215
	0A	180	150
	09	125	120
	08	100	100
	07	90	75
	06	60	50
	05	30	25
	04	15	12
	03	8	6
	02	4	3
	01	2	2
Iris	11	F1.8	
	10	F2.0	
	0F	F2.4	
	0E	F2.8	
	0D	F3.4	
	0C	F4.0	
	0B	F4.8	
	0A	F5.6	
	09	F6.8	
	08	F8.0	
	07	F9.6	
	06	F11	
	05	F14	
	04	F16	
	03	F19	
	02	F22	
	01	F26	
	00	CLOSE	

Gain	07	18 dB
	06	15 dB
	05	12 dB
	04	9 dB
	03	6 dB
	02	3 dB
	01	0
	00	-3 dB



**Exposure Control (2/2)**

		IRIS	GAIN
Bright	17	F1.8	18 dB
	16	F1.8	15 dB
	15	F1.8	12 dB
	14	F1.8	9 dB
	13	F1.8	6 dB
	12	F1.8	3 dB
	11	F1.8	0
	10	F2.0	0
	0F	F2.4	0
	0E	F2.8	0
	0D	F3.4	0
	0C	F4.0	0
	0B	F4.8	0
	0A	F5.6	0
	09	F6.8	0
	08	F8.0	0
	07	F9.6	0
	06	F11	0
	05	F14	0
	04	F16	0
	03	F19	0
	02	F22	0
	01	F26	0
	00	CLOSE	0
Exposure Comp.	0E	+7	+10.5 dB
	0D	+6	+9 dB
	0C	+5	+7.5 dB
	0B	+4	+6 dB
	0A	+3	+4.5 dB
	09	+2	+3 dB
	08	+1	+1.5 dB
	07	0	0 dB
	06	-1	-1.5 dB
	05	-2	-3 dB
	04	-3	-4.5 dB
	03	-4	-6 dB
	02	-5	-7.5 dB
	01	-6	-9 dB
	00	-7	-10.5 dB

**Zoom Ratio and Zoom Position  
(for reference)**

Zoom Ratio	Optical Zoom Position Data	D-Zoom Ratio
×1	0000	
×1.2	0800	
1.5	1000	
×1.9	1800	
×2.5	2000	
×3.4	2800	
×4.8	3000	
×6.8	3800	
×10.1	4000	
	4000	×1
	5bc0	×1.5
	69c0	×2
	7e80	×4

**Focus and Focus Distance (for reference)**

Focus Position	1000: Over Inf to 7600: 0.10 m Far end Near end	
Focus Near Limit	2000: 2.99 m 3000: 1.29 m 4000: 0.75 m 5000: 0.47 m 6000: 0.24 m 7000: 0.19 m 7600: 0.10 m	As the distance on the left will differ due to temperature characteristics, etc., use as approximate values. *The lower 1 byte is fixed at 00.

**Others**

R,B gain	00~FF
Aperture	00~0F

## Pan/Tilt Status Code List

P	Q	R	S	
----	----	0---	---1	A Pan movement all the way to the left
----	----	0---	--1-	A Pan movement all the way to the right
----	----	0---	-1--	A Tilt movement all the way up
----	----	0---	1---	A Tilt movement all the way down
----	----	--00	----	Pan movement is correct
----	----	--01	----	Pan position cannot be detected
----	----	--10	----	The Pan mechanism is abnormal
----	--00	0---	----	The Tilt movement is correct
----	--01	0---	----	The Tilt position cannot be detected
----	--10	0---	----	The Tilt mechanism is abnormal
----	00--	0---	----	No movement instructions
----	01--	0---	----	In the midst of a Pan/Tilt
----	10--	0---	----	Pan/Tilt completed
----	11--	0---	----	Pan/Tilt failed
--00	----	0---	----	Not initialized
--01	----	0---	----	Initializing
--10	----	0---	----	Initialization completed
--11	----	0---	----	Initialization failed

( -: optional)

## Pan/Tilt Position (for reference)

	Parameter (position)
PAN	FA60 (–100 degree) to 05A0 (+100 degree)
TILT	FE98 (–25 degree) to 0168 (+25 degree)

## LED Status

Status		POWER (Green)	STANDBY (Orange)
Main power ON	Power On (including initializing period)	On	Off
	When receiving infrared signals form Remote Commander	Blinking	Off
	At position detection error	On	Blinking
	Standby status	Off	On
Power off by VISCA or the Remote Commander			
Main power Off		Off	Off
Initialization error	Pan/tilt error	Blinking	Blinking
	Internal error(LSI, etc.)	Blinking alternately	
BOTTON switch and SYSTEM SELECT switch	Setting error	On	On